

PROCEEDINGS OF LEARNED SOCIETIES.

GEOLOGICAL SOCIETY.

November 17th, 1920.—Mr. R. D. Oldham, F.R.S.,
President, in the Chair.

The following communication was read:—

‘Ecology of Plants from the Westphalian and the Lower Part of the Staffordian Series of Clydach Vale and Gilfach Goch (East Glamorgan).’ By David Davies, F.G.S.

A generic record has been made of 45,000 plants taken from ten horizons of the Westphalian and the lower part of the Staffordian Series of Clydach Vale and Gilfach Goch. The ten horizons are in ascending order:—Five-Foot, Middle Yard, Upper Yard, Nine-Foot, Red, Six-Foot, Four-Foot, Two-Foot-Nine, Pentre, and Abergorky.

It is found that, for any one horizon, the generic proportion remains constant, even though examination of shales was made 4000 yards apart; but, when the horizons are taken vertically, there is often a complete alteration in the balance.

Equisetales are found to be the dominant forms on four of the ten horizons, Filicales on three, Pteridosperms on three, Lycopodiales on two, Cordaitales on one. A notable fact is that, when Lycopodiales are dominant, the Filicales and Pteridosperms are rare, and *vice versa*.

It is believed that physical changes occurred in the past, causing the altered balance of the plants throughout the ten horizons, and that, whereas low lands and swampy conditions favoured Lycopodiales, elevated land probably favoured the Filicales and Pteridosperms.

It seems that a cycle of more or less elevated land prevailed from the Five-Foot Seam times to the Six-Foot Seam times, followed by a cycle of depression, which extended from the Two-Foot-Nine Seam times to the Pentre-Seam times, and that a further cycle of re-elevation of land-surface prevailed from the Abergorky-Seam times to the No. 2 Rhondda-Seam times.

At the base of the Staffordian Series a lithological change occurs, accompanied by the incoming of smooth rounded pebbles of coal, and by an influx of new species; this suggests the probable presence of a geological and palæontological break at this horizon.